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Measurement and Mirage: The Informal Sector Revisited

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January 2024

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Summary

Recent years have seen an increasing availability and usage of measurements of informal sectors as the basis of scholarship and policy advice on the causes and consequences of informality. This has created an impression of a consensus around a clearly conceptualised and operationalised object of study – that when we talk about the informal sector, we know what we are talking about. This paper argues that this impression is largely a mirage. It suggests that underneath increasingly accepted measurements, and actively masked by them, there remains a fundamental conceptual confusion and continuing diversity in understandings of what the informal sector is. What should be questions of definition have been moved 'downstream' into the specifications of statistical models and measurements, resulting in a lack of transparency and the emergence of feedback loops between common conceptions and methodological assumptions. This has led a large part of the current literature on informal sectors to generate potentially misleading insights into substantial development policy discussions around taxation, registration, and social protection. This paper reviews the causes and consequences of these issues and suggests both best practices and revised definitions in order to address them.

Keywords

Informality; informal sector; measurement; formalisation.

Author

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Executive Summary

In recent years, the availability of new measurements of the size of informal sectors in lower-income countries has led to expansive scholarship on the causes and consequences of informality. With this have come extensive policy discussions on reducing informality in development – in 2017, the 'proportion of informal employment in non-agriculture employment', which includes employment in the informal sector, became one of the indicators of the Sustainable Development Goals (UNGA 2017). The combination of extensive measurements, an expansive academic literature, and recent flagship policy reports have created the impression that there is a consensus around a clearly conceptualised and operationalised object of study – that when we talk about the informal sector, we know what we are talking about.

This paper argues that this impression is largely a mirage. It suggests that, in fact, the opposite is true: that underneath a trend of increasingly accepted operationalisation and measurement, and masked by it, there remains a fundamental conceptual confusion and continuing diversity in understandings of what the informal sector is. New measurement methods have not resolved, but largely papered over different traditions in conceptualising informality, and have moved the details of what is and is not informal 'downstream' into the specifications of statistical models and measurements, reducing the transparency in what is actually measured. At best, this has created a seeming consensus that overlooks spurious foundations; at worst, this has created a framework in which data generation on informality can be shaped by feedback loops of preconceptions.

While these issues may appear conceptual and academic in nature, they have substantial practical consequences for policymaking in a variety of fields, ranging from social protection, taxation, poverty reduction and growth. But as this paper highlights, the size of informal sectors, changes in their size, and their relationship with policy interventions are all highly dependent on the nature of the informal sector's conceptualisation and measurement.

This paper traces the gap between the seeming consensus on the informal sector and the substantial ambiguities hidden in its operationalisation. It examines how this has happened, what its consequences are, and what options exist to render the term useful in its modern context. It begins by briefly reviewing the history of the term's conceptualisation and definition and then draws on recent developments in the measurement of informality, including direct measurements collected by the International Labour Organization (ILO) and indirect measurements through multiple indicators and multiple causes (MIMIC) models. The paper argues that both methods obscure some of the key

ambiguities in the conceptualisation of informality today, making the resulting data frequently untransparent and difficult to interpret. In particular, they risk conflations between the different levels of registration and the different features associated with informal enterprises – leading to increasingly blurred lines between defining features and common features, between proxies and measurements. Are informal firms not paying taxes by definition, are they commonly not paying taxes, or are they frequently paying taxes? The answer is highly dependent on measurement specifications, leading to substantial scope for confusion in scholarship and policy. This paper illustrates these arguments with reference to two recent policy flagship reports and to a novel data set of informal sector enterprises in Accra surveyed in 2022.

The paper discusses options to overcome these conceptual ambiguities. It argues against three potential suggestions: abandoning the term ‘informal sector’ altogether, embracing its ‘fuzzy’ boundaries, or recognising informality as a ‘spectrum’ or ‘continuum’. Instead, it calls for renewed precision and transparency in defining and measuring informal sectors. In line with this, it proposes the usage of narrower but categorised definitions, and outlines a taxonomy of such definitions.

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Acronyms

AMA	Accra Metropolitan Assembly
DGE	Dynamic General Equilibrium
EPH	Encuesta Permanente de Hogares (Permanent Household Survey)
GDP	gross domestic product
GLSS	Ghana Living Standards Survey
GRA	Ghana Revenue Authority
ICLS	International Conferences of Labour Statisticians
ICTD	International Centre for Tax and Development
IDS	Institute of Development Studies
ILD	Institute for Liberty and Democracy
ILO	International Labour Organization
IMF	International Monetary Fund
MIMIC	multiple indicators and multiple causes
NHIS	National Health Insurance Scheme
SEWA	Self Employed Women's Association
WIEGO	Women in Informal Employment: Globalizing and Organizing

1. Introduction

What is an informal enterprise?[1] It is well established that they are widespread – that the vast majority of enterprises around the globe are informal. Articles and books on the informal sector in developing countries typically start with a reference to its size. Given its substantial scope, these references serve as a claim to relevance, and as a delineation of the studied phenomenon. If we take Ghana as an example, commonly cited estimates exist of how much of the country's labour force is located in the informal sector (84.8 per cent) and how much of the country's gross domestic product (GDP) they are responsible for (42.9 per cent) (ILO 2018b; Deléchat and Medina 2021). Both types of estimates are commonly used in a large literature that engages with informality on an aggregate level. A literature that asks – and answers – questions such as 'Do informal enterprises reduce overall productivity and hinder economic development?' or 'Do informal enterprises reduce the availability of public services?' (Porta and Shleifer 2008; Loayza 1996). However, if we take a single enterprise, things immediately become less certain. Let's assume an own-account worker in Accra, a hairdresser perhaps, unincorporated, not registered with the Registrar General but keeping written accounts, in possession of a business licence, making regular tax payments at a municipal level and registered with the national pension system. As this paper highlights, the question of whether this enterprise is informal – and why, and why that matters – is surprisingly and quite fundamentally unresolved.

While it is generally understood that measuring the informal sector with perfect accuracy is a difficulty connected to its very nature, the availability of new measurements in recent years has led to an increasing confidence and exponential utilisation of these numbers as the basis of scholarship on the causes and consequences of informality. Alongside a growing consensus around a definition of the informal sector following the improved and operationalised framework by the International Conferences of Labour Statisticians, these measurements have contributed to bringing and holding together a field of study that is otherwise characterised by disciplinary and methodological diversity. In 2017, the 'proportion of informal employment in non-agriculture employment', which includes employment in the informal sector, became one of the indicators of the Sustainable Development Goals (UNGA 2017). Consequently, recent years have created an impression of a clearly conceptualised, delineated and operationalised object of study, and increasingly of policy discussions.

[1] I use enterprise here as equivalent to 'economic unit' as used in the 2018 International Labour Organization (ILO) statistical picture on the informal economy (ILO 2018b) – the sum of own-account workers and employer-led firms.

This paper argues that this impression is largely a mirage. It suggests that, in fact, the opposite is true: that underneath a trend of increasingly accepted operationalisation and measurement, and masked by it, there remains a fundamental conceptual confusion and continuing diversity in understandings of what the informal sector is. Common definitions and measurement methods have not resolved, but largely papered over different traditions in conceptualising informality, and have moved the details of what is and is not informal 'downstream' into the specifications of statistical models and measurements, reducing the transparency in what is actually measured. We are not much closer than we were 50 years ago to knowing what the informal sector is, but commonly discuss it and analyse it as if we do. At best, this has created a seeming consensus that overlooks spurious foundations; at worst, this has created a framework in which data generation on informality can be shaped by feedback loops of preconceptions.

Crucially, while these issues may appear conceptual and academic in nature, they have substantial practical consequences for policymaking in a variety of fields, ranging from social protection, taxation, poverty reduction and growth. Arguments around 'informality' have not merely been a feature in these policy fields but have materialised in a way that is highly sensitive to its conceptualisation and formulation. As this paper highlights, the size of informal sectors, changes in their size, and their relationship with policy interventions are all highly dependent on the nature of the informal sector's conceptualisation. For example, a central part of the discussion on social protection policies has been whether they 'increase informality' – a discussion that is fundamentally shaped by how informality is conceptualised and measured (Calligaro and Cetrangolo 2023). Similarly, there has been intense policy enthusiasm in recent years around tax registration, particularly in Africa (Moore 2021; Gallien *et al*. 2023). This has been motivated by the idea that large informal sectors are not paying any taxes – an idea that is, depending on the conception of informality, either true by definition or largely not true at all.

Notably, long-standing ambiguities are further widened and complicated by recent trends in the empirical realities of informal sectors. There has been, across the early twenty-first century, a marked increase of ways in which states register, trace, and interact with economic activities that go beyond traditional ideas of enterprise registration. This has included new forms of digital IDs, limited and simplified forms of registration, and new social protection schemes and cash transfers that are tied to registration programmes. There are now easier ways for very small enterprises and own-account workers to acquire at least some form of registration status. Decentralisation has contributed to the standardisation and recognition of the ways in which subnational institutions have long regulated informal businesses. At the same time, a dominant theme in recent scholarship on informality has been the heterogeneity of informal enterprises in both the features commonly associated with them and their connections with the state (WIEGO 2020; Gallien and van den Boogaard 2023; Chen and Carré 2020) – adding additional relevance to the need to distinguish clearly between defining features of the sector and features that are merely commonly associated with it.

In this context, this paper traces the gap between the seeming consensus on the informal sector and the substantial ambiguities hidden in its operationalisation. It examines how this has happened, what its consequences are, and what options exist to render the term useful in its modern context. It begins by briefly reviewing the history of the term's conceptualisation and definition and then draws on recent developments in the measurement of informality as its case studies. Specifically, it focuses on the collections of direct measurements assembled and standardised by the International Labour Organization (ILO 2018b), and the advances in indirect measurements afforded by the multiple indicators and multiple causes (MIMIC) models most commonly associated with the works of Friedrich Schneider (2004). Together, these represent the dominant measurements of the informal sector used today. The paper argues that these measurements provide examples of some of the key ambiguities in the conceptualisation of informality today. In particular, this relates to the conflations between the different levels of registration and the different features associated with informal enterprises – leading to increasingly blurred lines between defining features and common features, between proxies and measurements. The paper illustrates these arguments with reference to two recent policy flagship reports by the International Monetary Fund (IMF) and the World Bank, and to a novel data set of 2,700 informal sector enterprises in Accra surveyed in 2022 through a collaboration of the International Centre for Tax and Development (ICTD), Women in Informal Employment: Globalizing and Organizing (WIEGO), and the University of Ghana.[2]

The paper ends by discussing possible options to overcome these conceptual ambiguities. It argues against three potential suggestions: abandoning the term 'informal sector' altogether, embracing its 'fuzzy' boundaries, or recognising informality as a 'spectrum' or 'continuum'. Instead, it calls for renewed precision and transparency in defining and measuring informal sectors. In line with this, it proposes the usage of narrower but categorised definitions, and outlines a taxonomy of such definitions. The use of narrow categorised definitions provides a clear answer to the question about whether the firm described in the opening paragraph is informal: it is informal in the **general informality** sense of **national registration informality**, but not, for example, in relation to **subnational tax informality**.

[2] For more information on this data set and how it was collected, see Anyidoho *et al.* (forthcoming).

Finally, two important clarifications are in order. First, the focus of the paper is on the notion of the informal sector only, and not on the notion of informal work or the informal economy more broadly. Its focus is on the classification of enterprises, not labour or activities.[3] While there are ongoing discussions around the classification of informal labour, these are commonly structured around the existence and nature of employment contracts and social security provision, rather than registration. This makes them somewhat separate, and less vulnerable to the issues presented here, and consequently beyond the scope of this paper.[4] Second, while some of this paper focuses on the details of two large measurement projects, it is not intended as a dismissal of these methods. The point here is also not to be pedantic about the imperfect capture of a phenomenon that is famously difficult to quantify. On the contrary, both methods have been selected for their strength and popularity rather than their weaknesses, and this paper explicitly seeks to suggest a way to clarify the conceptual ambiguities, to encourage transparency among the users of these methods, and to re-define the sector in a way that is workable in the context of these methods, and particularly the ILO's project.

[3] There is a separate discussion on whether or not it is reasonable or indeed appropriate to refer to many of the economic activities discussed here as firms or enterprises, especially if they are survivalist own-account workers. However, the vast majority of the literature discussed here does indeed use these terms. Consequently, for the purpose of remaining congruent with the literature and arguments discussed here and avoid a conflation with a separate discussion on informal labour, this paper retains their description as firms or enterprises.

[4] The same is true for a range of adjacent concepts such as the 'non-observed economy' (Dell'Anno 2021). While the papers that use MIMIC models commonly refer to their primary focus as the 'shadow economy' rather than the informal sector, I still include them here as the two concepts are used interchangeably by a substantial section of the literature.

2. Defining the informal sector

2.1 Early conceptions: 'discovering informality'

One of the most notable aspects of the history of the study of the informal sector is that the term came first, and its definition second. While there is a longer history of a discussion of similar groups within economic history,[5] the origins and consequent popularisations of the term are most commonly traced to one of two British anthropologists. On the one hand, Boeke's (1942) work on Indonesia, which was consequently taken up by Lewis (1954) and Harris and Todaro (1970).[6] On the other hand, Hart's (1973) work on Ghana and a report by the ILO on Kenya of which Hans Singer and Richard Jolly were key authors (ILO 1972).[7] What both sets of original accounts have in common is that they provide the terminology alongside a description, rather than a definition of the sector. Notably, much early writing provides the impression that there is already an assumed general sense of what this sector is, and that the focus then lies in interpreting what it means or how it needs to be addressed. Ingle observes that,

> the very earliest available World Bank report on the informal sector (Mazumdar 1974), which appears to have been produced on a roneo machine, makes no reference to Todaro, Boeke or Hart and yet uses the term 'informal sector' as though it were already a well-entrenched concept in the discourse.
> (Ingle 2013: 468)

There is a sense here of how much the introduction of the terminology itself, even without an agreed upon definition, contributed to scholarship on informality: by providing a language to talk about a seemingly shared object of study, even if there was not always a shared conception of it.

Rather than defining the boundaries of the sector, early accounts then focused on a description of its content, noting either common features or common occupations. Hart, in his first account of the sector, provides a list of occupations, distinguishing between legitimate ('musicians, launderers, shoeshiners, barbers, night-soil removers') and illegitimate activities ('hustlers and spivs in general; receivers of stolen goods; usury, and pawnbroking (at illegal interest rates); drug-pushing, prostitution') (1973: 69). This approach indeed somewhat resembles Marx's listing of the members of the Lumpenproletariat ('pickpockets, tricksters, gamblers, procurers, brothel keepers, porters, literati, organ grinders, rag-

5 Hart (2017) notes Henry Mayhew's investigations for the *Morning Chronicle* in the 1850s and Geertz's *Peddlers and Princes* (1968). There also exists a strand of scholarship that first locates informality within Marx's (1852) discussions of the 'Lumpenproletariat'.

6 For a good introduction to this history see Guha-Khasnobis *et al*. (2006).

7 On authorship, see ILO (2018a).

pickers, knife-grinders, tinkers, beggars' in *The Eighteenth Brumaire of Louis Napoleon* (1990: 75).

The authors of the ILO report on Kenya provide a similar list ('variety of carpenters, masons, tailors and other tradesmen, as well as cooks and taxi-drivers, offering virtually the full range of basic skills needed to provide goods and services for a large though often poor section of the population') (1972: 5), but then move on to a set of features. While these characterise the sector, they focus on common features, rather than defining features: '(a) ease of entry; (b) reliance on indigenous resources; (c) family ownership of enterprises; (d) small scale of operation; (e) labour-intensive and adapted technology; (f) skills acquired outside the formal school system; and (g) unregulated and competitive markets' (*ibid.*: 6). Notably, they also provide a first reference to the relationship with formal regulation: 'Informal-sector activities are largely ignored, rarely supported, often regulated and sometimes actively discouraged by the government' (*ibid.*: 6).

In other accounts, informality is described through local slang and its analogies, as 'the hustle economy', 'Systeme D', and as 'the ingenuity economy, the economy of improvisation and self-reliance, the do-it-yourself or DIY economy' (Neuwirth 2011: 17). Williams (2023: 2) identifies at least 38 different adjectives and seven nouns that have been used to describe the sector. Almost all are defined in the negative – as Hart noted, the sector has often been conceptualised by what it is not:

> The label 'informal' may be popular because it is negative. It says what people are not doing – not wearing conventional dress, not being regulated by the state – but it does not point to any active principles they may have for doing it. It is a passive and conservative concept that acknowledges a world outside the bureaucracy, but endows it with no positive identity.
> (Hart 2005: 10)

Perhaps provocatively, Harris even contemplates a 'know it when you see it' approach: 'it is for the initiates to spot IS [the informal sector] and they know it when they see it' (quoted in Guha-Khasnobis, Kanbur and Ostrom 2006: 4).

Without providing a comprehensive summary of the different conceptions of the informal sector, three features of early scholarship on the sector stand out. First, there is no generally agreed upon definition and typically a larger focus on its meaning rather than its delineation. Differences between dualist, structuralist, legalist, and voluntarist schools of thought are not primarily expressed through discussions of where the sector starts and ends. Descriptions and lists of features generally act as stand-ins for definitions. Second, there is a common conflation between informal enterprises and informal workers. Third, and perhaps most critically, registration and the relationship with the state is not the dominant factor of many accounts of informality. As is notable in the conceptions above, discussions of the means and technologies of informal work, their role in the wider economy, the relationship with the market, overlaps between providers of capital and labour or, more generally, the mode of production all sit alongside the issue of regulation. By the late twentieth and early twenty-first century, however, all these features begin to change.[8]

2.2 Post-Delhi Group: operationalising a hybrid

The past 20 years have seen the emergence of an increasingly broadly accepted definition of the informal sector, driven largely by the work of the ILO's International Expert Group on Informal Sector Statistics (Delhi Group) in collaboration with the civil society organisation and academic network WIEGO. Over the years, a statistical definition has been adopted and revised at subsequent International Conferences of Labour Statisticians (ICLS) and has been accompanied by the encouragement of country-level data collection and compilation by the ILO following its Recommendation No. 204 on 'Transition from the Informal to the Formal Economy' (ILO 2018b: 8). When informal employment was codified as an indicator of the Sustainable Development Goals, explicit reference was made to the ILO codification.[9]

With the development of this statistical definition has come an increasingly clear and commonly accepted distinction between informal employment and employment in the informal sector.[10] Here, the former is a jobs-based concept defined in terms of the 'employment relationship and protections associated with the job of the worker' (OECD and ILO 2019), while employment in the informal sector is an enterprise-based concept defined in terms of the nature of the enterprise within which the work is situated. Notably, informal employment (or, depending on the publication, employment in the informal economy) thereby describes work that is happening both within the informal and the formal sector. Subsequent definitions also make further distinctions between different types of work, ranging from own-account work to contributing family work.

With respect to the informal sector in particular, the conceptualisation and operational definition in the 1993 ICLS resolution (see p.17) has seen relatively little change over the years and has been widely used across different fields and publications. It has been central to the development of an increasing consensus on the conceptualisation of the informal sector and contributed to the increasing

8 At least in many cases – an absence of the definition of key terms or an interchangeable use of sector and economy can still be found in some of the most prominent writing on the informal sector in recent years (Porta and Shleifer 2008). As Elgin (2020: 9) points out, most international institutions still lack a formal working definition of the informal sector.

9 Though the **metadata** advances its own conceptualisation, it both cites and closely mirrors the ILO specification.

10 Somewhat separate from both, there has been an approach toward informality through informal economic activities; however, I do not cover those here (Williams 2023).

prominence of registration as a conceptual pillar of the informal sector. Looking back, both of these developments are somewhat surprising, as the definition remains, in its essence, a hybrid position.

In the years leading up to the conference, two different conceptions of the informal sector increasingly crystallised out of the wider set of previous approaches. One focused on informality as a particular form of production, characterised by the internal features of the enterprise and how it carries out its activities. The other on informality as enterprises that do not confirm to a given legal and administrative framework. This discussion cuts precisely to the role of registration in defining informality – on whether a lack of registration is the defining boundary of a common feature of economic activities in the informal sector. As a later ILO publication notes,

> [there] was no agreement at the 15th ICLS as to which of the two approaches was preferable. The definition in the 15th ICLS resolution therefore incorporated both approaches, in the sense that it allows non-registration and/or employment size to be used as a criterion in distinguishing informal sector enterprises from other household unincorporated enterprises.
> (ILO 2013: 18)

Notably, the more general definition of the sector does not mention registration at all and is heavily skewed toward internal features of the enterprise – it also mirrors earlier conceptualisations in focusing on common – typical – rather than defining features:

> The informal sector may be broadly characterized as consisting of units engaged in the production of goods or services with the primary objective of generating employment and incomes to the persons concerned. These units typically operate at a low level of organization, with little or no division between labour and capital as factors of production and on a small scale. Labour relations – where they exist – are based mostly on casual employment, kinship or personal and social relations rather than contractual arrangements with formal guarantees.
> (ILO 2018a)

However, this changes substantially in its operational definition, designed to facilitate the statistical measurement of informal sectors. Here, it offers two different conditions under which enterprises (own-account enterprises or enterprises of informal employers) may be classified as informal. One is based on registration status, the other is based on the number of employees – presumably as a proxy for the 'modes of production' conception of informality. Furthermore, the operational definition leaves substantial scope for how each of these criteria may be interpreted. With regard to registration, it states that registration 'may refer to registration under factories or commercial acts, tax or social security laws, professional groups' regulatory acts, or similar acts, laws, or regulations established by national legislative bodies' (ILO 2018a, Section 8.3). With regard to size, it states that the upper size limit,

> may vary between countries and branches of economic activity. It may be determined on the basis of minimum size requirements as embodied in relevant national legislations, where they exist, or in terms of empirically determined norms. The choice of the upper size limit should take account of the coverage of statistical inquiries of larger units in the corresponding branches of economic activity, where they exist, in order to avoid an overlap.
> (ILO 2018a, Section 9.4)

Consequently, the definition and operational definition of the informal sector developed by the Delhi Group resolves the tensions between different conceptions of the informal sector by not resolving them, essentially maintaining them both as options, and providing substantial leeway in their operationalisation. The effects of this will be discussed in the section on direct measurements below.

2.3 The rise of registration

The ILO definition documents a further trend in the conceptualisation and definition of the informal sector in recent years: the increasingly central role of registration. While it is not particularly important in the early conceptions of the sector discussed above, it has become the dominant conception of the sector today.[11] While approaches that emphasise the internal organisation of enterprises are still prevalent – the edited volume by Basudeb Guha-Khasnobis *et al*. (2006) is an example of the coexistence of both analyses – the rise of the registration discourse is notable, especially in policy-adjacent scholarship. This is perhaps in part attributable to an increasing interest in measurement and the difficulties attached to operationalising features of modes of production – as exemplified by the 'size' proxy discussed above.

Perhaps more importantly, this has coincided with a range of parallel though quite heterogeneous policy, academic, and activist trends that have, in different ways, all emphasised registration as a key feature of informality. First, there is the strand of scholarship and activism popularised by Hernando de Soto and his Institute for Liberty and Democracy (ILD) that emphasises titling and the registration of capital and assets as the key to transforming informal enterprises (De Soto 1989, 2003). Second, there is the activism of organisations such as India's Self Employed Women's Association (SEWA) and WIEGO that have

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[11] Perhaps a fitting watermark for popular conceptions, **Wikipedia describes the informal sector** as 'the part of any economy that is neither taxed nor monitored by any form of government' (and, notably, as interchangeable with the informal economy).

emphasised the recognition of work and workers' organisations by the state as a key avenue toward improving informal livelihoods (WIEGO 2020). Third, and closely connected to this, is the decent work agenda of the ILO and its Recommendation No. 204 which highlights the inclusion into state regulatory policies (ILO 2021). And fourth, there is the increasing policy interest in the taxation of the informal sector, which commonly conflates informality with the absence of tax registration or tax payment (Gallien and van den Boogaard 2023). While there are fundamental differences between these different approaches toward informality, what they largely share is a view of formalisation that is connected to the state, and consequently are amenable to a view of informality that is closely related to forms of registration.[12] What remains substantially different are the respective conceptions of what form of registration is needed – however, almost all of these can be found in the inclusive list of potential forms of registration in the operational ILO definition discussed above. I will return to this in section 3.

[12] The draft resolutions of the most recent ICLS seems to further emphasise the focus on registration and the recognition by government authorities.

3. Measuring the informal sector

Given the difficulties involved in measuring informality, it is unsurprising that there has been a huge diversity of methods to measure the informal sector. Direct methods have ranged from using labour force and household surveys (Isachsen and Strøm 1985; Hussmanns 2005; ILO 2013) to firms and (formal and informal) enterprise surveys (Koto 2015; Anyidoho *et al*. 2022; Anyidoho *et al.*, forthcoming) or even the world values survey (Oviedo, Thomas and Karakurum-Özdemir 2009). Indirect methods have ranged from analysing currency demand (Tanzi 1983; Chong and Gradstein 2007) to electricity consumption (Kaufmann and Kaliberda 1996; Lackó 1998), to income–expenditure gaps (Park 1979).[13] Some have dealt with the conceptual and definitional ambiguities of the informal sector by quite explicitly drawing on proxies, while others have inadvertently taken on the 'know it if they see it' approach; for example, by surveying leaders of formal sector firms about the size of informal sectors (Porta and Shleifer 2008).

Out of this diversity of methods and measurements, two measurements have become increasingly dominant. I will focus on these as case studies in this section. One – the data assembled by the ILO based on labour force surveys (ILO 2018b) – relies on direct measurements. The other – the data assembled by Friedrich Schneider and his co-authors (Schneider 2004; Schneider and Enste 2000) based on a MIMIC model – relies on indirect modelling. Aside from a commonly accepted definition, the contribution of these methods to the increasing availability of cross-country comparable data on the size of informal sectors has aided the rapid emergence of a large number of studies on the causes and consequences of informal sectors. Besides their dominance, they are worth examining because they represent, for all their faults, some of the more rigorous attempts at measuring informality within their category. As with all attempts at measuring informality, both have their downsides and imprecisions. There have been substantial methodological discussions around both methods in recent years (ILO 2019; Breusch 2016; Kirchgässner 2016). The goal here is not to review these comprehensively, but to examine how these methods deal with the ambiguities in the conceptualisation and definition of informality, and to what effect.

What this section argues is that like the definitions discussed above, both measurements do not resolve the fundamental conceptual ambiguities around the informal sector. Instead, their operationalisation masks these ambiguities and moves them 'downstream' into more technical specifications of the measurement

[13] For more comprehensive introductions to the diversity of measurements see Hussmanns (2005); ILO (2013); Elgin (2020); Williams (2023); Bensassi and Siu (2022); and Alderslade, Talmage and Freeman (2006).

process, generating the illusion of comparative measurements. In the case of direct measurements, the primary ambiguities that are maintained stem from the co-existence of size and registration and the lack of clarity about which form of registration is relevant. For the indirect methods, the primary ambiguities that are maintained stem from the selection of the features of the informal sector through the selection of causes and indices.

3.1 Direct measurements: ILO

For the past few decades, the ILO has been the centre of the compilation and analysis of data on the size of informal economies and informal sectors based primarily on labour force data. The result of this is *Women and Men in the Informal Economy: A Statistical Picture*, the third edition of which was published in 2018. It has become the go-to resource for direct measurements of the size of informal sectors, especially with respect to indicator 8.3.1 of the Sustainable Development Goals (ILO 2018b). There is much to commend in this publication and approach – it has been refined over time through subsequent ICLS guidelines and has expanded from 47 countries in 2013 to over 100 countries in 2018, covering over 90 per cent of the global labour force (*ibid*.). And while the publication acknowledges that the quality of its data is dependent on the quality of labour force surveys conducted by national statistical agencies, and that there is 'a certain degree of flexibility' (*ibid*.: 6) in the measurements employed, it is explicitly geared toward comparability, and presents comparative analysis throughout. It is, by some margin, the best resource assembled on the size of informal sectors.

The data on the size of informal sectors is collected through an application of a slightly adjusted operationalised version of the 15th ICLS guidelines to labour force surveys from across the world. In order to determine whether an enterprise is informal, the approach first employs, in order, four key variables. First, enterprises are sorted by institutional sector (public/private/households), then by whether goods and services are at least partially produced for sale or barter. If some are, the next two criteria that are applied are whether they are registered, and if not, whether they maintain accounts as required by law. Only if data on these factors is missing, a set of further factors are considered: if employees are involved, their social security contributions or taxes on wages, whether premises are fixed and visible, and whether the enterprise has six or more employees (**see figure 3 in ILO 2018b: 9**).

De facto, this measurement approach maintains the 'flexible definition' that contains both registration and size as factors, but with three noteworthy developments. The first is that it establishes a hierarchy between registration and size as defining factors. Regulation comes first: for labour force surveys in which data on registration is available, this seems intended as the primary defining variable.[14] The second is that while the operationalisation establishes a clear cut-off in terms of size which was not in the original definition, it does not provide any additional clarification on the type of registration. In terms of the type of registration, it notes that:

> this includes registration with social security authorities, sales or income tax authorities and should be at national level. It identifies enterprises that are similar to corporations (quasi-corporations) and therefore outside the scope of the informal sector. The appropriate forms of registration relevant to the concept of informal sector should be examined in the national context.
> (ILO 2018b: 8)

This still contains a huge variety of remarkably different types of registration with very different effects on enterprise features and the size of the informal sector in these countries – and there is no public information available on which form of registration has been used in which country.

The third, and perhaps most perplexing, is that this methodology and its reporting in the *Statistical Picture* does not distinguish between measurements that have been arrived at through its ‘key variables’ and those that have been developed using additional variables. *De facto*, the operationalisation develops two ‘paths’ through which enterprises are classified as informal. If information on registration is available, enterprises are classified according to their registration status. If it is not available, enterprises are most commonly classified by their size – at times combined with a variable on bookkeeping. The report specifies that the breakdown between which ‘path’ has been taken is almost even: while registration data is available for ‘nearly half’ of the countries included, the ‘alternative’ path is taken for 48 per cent of countries studied (*ibid*.: 83). However, when results are reported, or throughout the report, is it not made clear which measurement has been used or how it was derived. *De facto*, for half of the reporting countries, the reported size of the informal sector represents a measurement of the number of unregistered enterprises, for the other half it presents a measurement of the number of enterprises with under six employees. But it is entirely unclear which is used in which country.[15]

De facto, in this measurement approach, the old division between registration- and organisation-focused conceptions of the informal sector is decided through data availability. Part of this is a technical issue: data availability is a real problem, and its awareness and management of the limitations of labour force surveys is among the greatest assets of the ILO project. But this technical issue

[14] Though there is some lack of clarity as to where this prioritisation is applied – on the side of national statistical agencies or within the ILO.

[15] It is worth noting here that both the transparency and comparability issues have been taken on within the working group for the revision of the standards on informality within the ILO.

here is grafted upon a conceptual issue, when data availability is employed as a decider between two conceptions of informality. These are not only conceptionally but also empirically different. As ILO analysis on this issue itself highlights, firm size is far from a perfect predictor of registration status and vice versa. For example, drawing on the 2018 Permanent Household Survey (Encuesta Permanente de Hogares, EPH) in Argentina, it notes that the majority of firms with between 5 and 49 employees are not registered – the number only goes above 50 per cent when looking at firms with more than 50 employees. Looking at Rwanda's labour force survey from 2018, the likelihood of registration stays under 50 per cent for firms of all sizes – but remains over 30 per cent even for firms that have five employees or fewer (ILO 2019).[16]

3.2 An illustration: informality in Accra

The issue gets more complicated when considering the type of registration itself. In order to illustrate and clarify this point, I draw on survey data from 2,700 informal enterprises that make up a representative sample of informal enterprises in urban Accra collected through a joint ICTD–WIEGO–University of Ghana research project.[17] Specifically, these are 2,700 enterprises determined to be informal by the registration proxy that is commonly used by the statistical service in Ghana and reported to the ILO: these enterprises are not registered with the Registrar General. Most of them are indeed also small – over 80 per cent are own-account workers and of those enterprises that included paid employees, the vast majority employs less than five, though small firm size is a feature of Accra's economy more broadly, rather than just its informal sector (Teal 2023). Ghana is an interesting case study not only because its centrality in the study of the informal sector – it was where Hart first wrote about the sector, and has been the subject of a number of studies on informality that is far disproportionate to its size. It also has a large informal sector – the ILO reports that 84.8 per cent of employment in Ghana is in the informal sector (ILO 2018b).[18] Like much of Africa, it also has a high proportion of informal own-account workers. These are particularly relevant here as they complicate the relationship between forms of registration that relate persons to the state, and forms of registration that relate companies to the state: in practice, especially on a local level and in a context with large numbers of own-account workers, these distinctions can be fluid.

Interestingly, this survey data allows us to simulate how the size and composition of Accra's informal sector would change if we were to not apply the 'registration with the Registrar General' conception of registration, but instead apply other

16 An important corollary of this is that we need to be extremely careful with analyses of informal sector firm size based on ILO data, as this is at least partially built into the definition.

17 For more information on this data collection and its methodology, see Anyidoho *et al.* (2022).

18 The ILO here is drawing on data from the 2013 Ghana Living Standards Survey (GLSS).

forms of registration that are all currently admissible under the ILO operationalisation. For example, 8.8 per cent of this sample report being registered with the Ghana Revenue Authority (GRA) for tax purposes while 22.5 per cent report making regular tax payments to the GRA. Consequently, shifting the form of registration employed toward a tax-based registration proxy would have a substantial impact on the size of the informal economy in Accra. This becomes even more striking when considering other registration forms. The above operationalisation also allows registration with social security authorities – 62 per cent of the respondents in this sample (meaning own-account workers or employers) are registered with the National Health Insurance Scheme (NHIS) set up in 2003. If this was taken as the relevant form of registration, as it could be under the current definition, the size of Accra's informal economy would suddenly shrink dramatically. This also highlights the at times fluid boundaries between the relationships that individuals have with the state, and that individuals in their role as own-account economic units have with the state.

While the ILO operationalisation suggests that registration 'should be' referring to registration on a national level, a brief view at local registration in Accra highlights that this misses a huge part of the reality of the informal sector in the city: 40.4 per cent of informal enterprises in Accra report being registered with the Accra Metropolitan Assembly (AMA); 59 per cent of informal enterprises in Accra report paying some forms of taxes to the AMA – highlighting that the focus on national registration is skipping an important part of registration more broadly – a point I will return to in section 4.2.

Notably, changing the conception of registration not only changes the size of the informal sector but also has effects on the features of the sector, as an aggregate of the features of the enterprises that get captured under a specific type of definition. For example, when only considering the registration with the Registrar General as an exclusion condition for informality, the median monthly gross income of informal enterprises in Accra is 900 cedis. If we shift to a conception of registration that also counts enterprises registered with the GRA as registered, that median income sinks – not hugely, but noticeably – to about 868 cedis. The proportion of informal enterprises that report having access to a bank account similarly falls, as does the proportion of informal employers. Shifting to a conception of registration that counts registration with the NHIS substantially shifts the gender balance of the informal sector (women are more likely to be NHIS registered) and so on – the definitions not only have an impact on the size of the sector but also its features, our substantial knowledge about it.

Accra also provides an important reminder that, as discussed above, in countries with high levels of informality and high numbers of informal own-account workers, the boundaries between personal and company registration are fluid and can have a substantial impact on the conception of the informal sector. Furthermore, government registration strategies are changing and new forms of registration and connections between citizens, enterprises, and states are emerging. Seventy-eight per cent of informal workers in Accra (and 78 per cent of own-account workers) reported that they had a Ghana Card, a national ID card. In 2021, the GRA announced that the Ghana Card PIN was to start replacing the Tax Identification Number (TIN), Social Security and National Insurance Trust (SSNIT) biometric number and National Health Insurance number. The Ghana Card PIN is also linked to SIM cards and bank accounts, as well as the Births and Deaths registry. Per this reform, formality as defined as registration through one of these bodies, at least for own-account workers, would consequently increase substantially.

What this brief empirical excursion has sought to highlight is that the broad scope of potential levers of registration that can be considered for the measurement of the informal sector, and presumably are in use in different countries, and the lack of transparency around them, is a substantial problem for comparability of the size of informal sectors across countries. The choice of registration affects both the size and the substantive features of the sector, and consequently the very basis for comparison. It also highlights that, as new forms of registration emerge, and the nature of work and relationships with the state itself change, some of the central assumptions around the 'bundle' of features that characterise the informal sector (that they do not pay taxes, that they are disconnected from social security provision) do not necessarily hold. As the next section highlights, this provides a substantial problem for indirect measurements of the informal sector.

3.3 Indirect measurements: MIMIC

While the availability of data on the informal sector based on direct measurements has improved substantially in recent years, it is still reliant on the frequency of surveys compiled by national statistical agencies. Consequently, it has not produced the kind of country-year informality panel data that is of particular interest for econometric analysis of informality. This, however, has been provided through indirect measurements, and explains their enormous popularity in recent years. Here, the work of Friedrich Schneider and his colleagues with (dynamic) multiple indicators multiple causes (MIMIC/DYMIMIC) models, and Elgin's (2020) more recent variations on this, have been particularly dominant.[19] Cheap and publicly available, work in this tradition has given rise to a huge swath of quantitative cross-country analysis of informality, focusing in particular on its 'causes and consequences'. It has also, notably, been the

[19] I do not discuss Elgin's Dynamic General Equilibrium (DGE) model here, but instead focus on MIMIC, both for brevity and because the latter has to date been used substantially more in the relevant literature. Some of the issues of MIMIC models discussed here still fully apply to DGE models (the benchmarking issue, for example) while others are more complex – DGE does provide more micro-foundations than MIMIC does, but still is vulnerable to the assumptions embedded in these foundations, for example about taxation.

dominant measurement of informality employed in recent years by World Bank and IMF flagship publications (Ohnsorge and Yu 2022; Deléchat and Medina 2021).

Built on a methodology first employed by Frey and Weck (1983), MIMIC models essentially treat the size of the informal sector (or whatever their respective object) as an unobserved latent variable. In order to estimate this variable, they require a theoretical model that posits certain causal relationships between time-varying causes and indicators of this variable. These are usually publicly available data, typically yearly and across a large number of countries. There has been huge variety in the respective specifications across the literature, with common causes including tax burdens and tax morale, business freedom and other indices of regulatory burdens, and common indicators including employment and GDP rate. Notably, as MIMIC models just generate an index variable rather than a total size of the informal sector, they need to be benchmarked against a measurement of the size of an informal economy at one point in time that has been estimated using a different methodology. In contrast to the data collected by the ILO, MIMIC models have usually not estimated the size of informal sectors as a percentage of the labour force, but instead as a percentage of GDP. This has made a direct comparison between the direct and indirect methods difficult and somewhat masks their differences, with policy reports often drawing on both methods.

As with the direct measurements, there has in recent years been a substantial methodological discussion of the utility and shortcomings of MIMIC models (Kirchgässner 2016; Breusch 2016) – though it does not seem to have decreased their popularity. I do not seek to recount them all here and instead focus on the models' relationship to the definition and conception of the informal sector. However, as it is so critical for the reported size of the informal sector, it is worth briefly flagging the severity of one issue in particular – its reliance on benchmarking. As noted above, even as they have increased in complexity, indirect measurement models based on simultaneous equations have still required one data-point generated through a different methodology to benchmark their measurements against. Through calibrating the 'level' of the data, this benchmark has a substantial impact on the measurements generated, and needs to be given particular attention in the use of these methods.

In this regard, indirect models in recent years have somewhat taken on the appearance of a house of cards, with increasingly complex models still relying on their predecessor's foundations. Elgin's (2020) novel DGE model, for example, is benchmarked against a previous version of a MIMIC model developed by Friedrich Schneider. Schneider's model in turn also requires benchmarking, and is benchmarked against a currency demand model. Currency demand models have been increasingly criticised in recent years[20] not merely for the implausibility of their estimates, but because they also only produce a relative measure, and consequently they themselves also need to be benchmarked in order to derive an estimate of informality as a percentage of GDP. The common practice to benchmark currency demand models is to assume a base year in which informality is zero or close to zero – a rather remarkable assumption given everything we know about the history of informality (Kirchgässner 2016: 6; Medina and Schneider 2021: 24). With different models resting on other models with increasingly weaker empirical standing and increasingly stronger assumptions, a 'zero base year' assumption represents an extremely shaky foundation for this house of cards.

More relevant for the focus of this paper, however, is the question of how these measurements engage with the ambiguity around the definition and conception of the informal sector. Here, three observations are worth noting. First, the literature drawing on indirect methods generally has been substantially less concerned with definitional questions than the literature focusing on direct measurements. Skipping directly to the data, a notable amount of scholarship in this field provides no definitions at all, provides multiple definitions, or expresses the general perception that definitions are 'difficult' with regard to this topic (Elgin 2020: 7). Closely related to this is a common usage of different terms as interchangeable, even though they are not considered interchangeable in the literature that builds on direct measurements: this includes the informal sector, informal economy, and 'shadow economy' in particular.

Second, when definitions are provided, they typically do contain some reference to government regulation, making reference to informal and shadow economies being 'hidden from official authorities' (Deléchat and Medina 2021: 11) or escaping 'most (if not all) government regulation' (Elgin 2020: 7). There is, in the theoretical frameworks underpinning these models, a strong voluntarist bent. Schneider's conception in a recent IMF flagship report is particularly clear on this, defining his shadow economy to include,

> all productive economic activities that would generally be taxable were they reported to the state (tax) authorities. **Such activities are deliberately concealed** from public authorities to avoid payment of income, value added, or other taxes and social security contributions or to avoid compliance with certain legal labor market standards, such as minimum wages, maximum working hours, or safety standards and administrative procedures.
> (Medina and Schneider 2021: 14, my emphasis)

[20] A critique that, notably, Schneider has largely acknowledged and conceded (Medina and Schneider 2021).

Third, despite the voluntarist and regulatory-focused conception in these definitions, this method has its own, somewhat subtle, operationalised definition built into its methodology. This definition, interestingly, is essentially list-based. While the operationalised definition in the case of the direct measurements used by the ILO outlines the criteria under which an enterprise is counted as informal, and consequently drives the reported size of the informal sector, the theorised causes and indicators do the same for the MIMIC model. They, in essence, describe what aspects of the economy are employed in order to estimate informality, what informality is characterised by. This explains the somewhat more relaxed attitude of this literature to definitions. Consequently, it is not surprising that this literature sees a return to another common trend in the very early literature on the informal sector: its description not through a definition, but through a list of features.[21]

The MIMIC model, then, presents a different methodological solution to the conceptual problem that there is no unified definition of the informal sector. If the ILO's measurements are based on the operationalisation of a hybrid definition, the MIMIC methodology is the operationalisation of the absence of a definition – of relying entirely on a list of features; a list of features that are commonly, but not always and not strictly or per definition associated with informality. Although it has lost a lot of the focus on the mode of production of early conceptions of the informal sector, this method provides a rather neat methodological fit for the long-standing conceptions of informality that rely on a list of features through which it is commonly imagined. However, it is exactly here – in the list, and in the imagined – where the issues with this fix become particularly stark.

Perhaps the most critical downside of the MIMIC approach, and model-based approaches to measuring the informal sector more broadly, is their reliance on their specifications. Their estimations of the size of the informal sector are hugely dependent on the choice of causes and indicators. This is quite universally recognised in the methodology literature on this, both on the side of its critics and its proponents.[22] With its origins in psychometrics, MIMIC is designed for a context in which we have a very good statistical sense of the causes and indicators of a phenomenon that cannot itself be observed. It is, as its proponents themselves point out, a confirmatory rather than an exploratory

21 Elgin (2020), for example, lists four features that describe rather than define the sector (escapes most if not all regulation, largely omitted from national statistics, mostly labour intensive and using little capital, lacking several social benefits. Schneider commonly refers to a table that lists and categorises a set of activities (Schneider and Enste 2000; Schneider 2004, 2002).

22 See Breusch (2016) and Kirchgässner (2016) for more critical perspectives. Among its proponents, Schneider has notably engaged extensively with these points of criticism and largely acknowledged these challenges, arguing that they are 'incentives for further research rather than a reason to abandon the method' (Medina and Schneider 2021: 27). Elgin has noted that MIMIC models 'rely on strong assumptions' (Elgin *et al.* 2022: 48) and have themselves 'no micro-foundations' (Elgin 2020: 24) and that the 'selection of the causes and indicators is somewhat arbitrary' (*ibid.*: 24).

model. This then puts substantial pressure on what is being confirmed – on the selection of indicators.

Crucially, however, there is no consensus whatsoever on the causes that should be included. They are often 'somewhat arbitrary' (Elgin 2020: 24) and vary substantially in number and size. There have been substantial critiques of some of the chosen indicators – Williams' review of the method labelled some of the common causes and indicators as 'highly questionable' – noting in particular the use of tax rates (2023: 59). There are also good reasons to believe that relevant factors would differ by country (Kirchgässner 2016). While parts of the literature on this are relatively explicit in the causes that have been included in the model, other applications, especially those drawing on pre-existing MIMIC data sets, are often highly untransparent on which factors have been included, why, and how these have been measured. What is almost always left unsaid in MIMIC models is the fact that these causes are not in fact emerging out of a theoretical consensus on what the informal sector is and what it is caused by – because this consensus does not exist. Instead, they are either entirely arbitrary or are themselves advancing a theoretically informed conception of informality. I will return to this point.

A further complication of the 'causes-approach' of conceptualising informality through MIMIC modelling is methodological. By employing *a priori* theoretically specified 'causes' in creating the measurement of informality, the resulting measurements are inherently limited in their application to tests of what actually causes informality. There are two levels to this. One, while MIMIC models assign a relative causal weight to the different pre-defined causes, this must not be confused with an actual causal explanation of informality. For example, one MIMIC model identifies the 'driving forces of informality' to be, with the following proportions: personal income tax (13.8 per cent), indirect taxes (14.1 per cent), tax morale (14.5 per cent), unemployment (14.7 per cent), self-employment (14.5 per cent), growth of GDP (14.3 per cent), and business freedom (4.3 per cent) (Elgin 2020: 37). However, these proportions are hugely determined on the causes selected in the model set-up and need to be interpreted with utmost caution – they cannot be taken as an indication of a causal relationship of these factors with the 'real' informal sector outside of the world of the model. Unfortunately, this caution is not always applied – I will return to this point in section 3.4.

A related consequence of selected theoretical causes being included in the construction of the model estimates of informality is that other statistical models that use these estimates cannot be used to test the impact of these causes on informality. Put simply, if social security contributions or tax morale are part of the causes used to construct an estimate of informality via a MIMIC model, this estimate can then never be used to test whether social security contributions or tax morale are a driver of informality. This doubles the analytical challenges of the MIMIC model – it cannot make any causal predictions, and its measurements cannot be used to make any causal predictions about the causes of informality that it assumes in its model. While this issue has been clearly acknowledged by the designers of these models, critics have highlighted that this does still happen in this literature, be it with regard to the role of taxation and tax morale, the relationship with GDP per capita, and the impact of regulation (Kirchgässner 2016: 5). This further highlights why transparency of the design of MIMIC estimates is so critical – and that the measurement does not present an alternative to a conceptual consensus on the informal sector.

Similar to the direct measurement approaches noted above, indirect approaches through MIMIC models have not resolved or overcome the absence of a clear definition or conceptual consensus of the informal sector. Instead, they also mask a continuing diversity of conceptions by pushing theoretical and conceptual decisions into methodological specifications where they are less visible but remain impactful. Section 3.4 provides a brief case study of the consequences of these dynamics.

3.4 An illustration: measurements, politics, and taxes

From the first mentions of the concept onward, scholarship on the informal sector has been intimately tied up with the question of its causes and consequences – and the policy recommendations that follow from it. This has been further expanded through the wider availability of statistical measurements of informality, especially through the expansive panel data sets created through indirect methods. In 2022 alone, both the World Bank and the IMF published extensive flagship reports on the informal sector that draw heavily and explicitly on new scholarship and the measurements discussed above to advance policy recommendations (Ohnsorge and Yu 2022; Deléchat and Medina 2021). While the interest in an evidence-based policy approach to informality is very welcome, it also provides a case study of the practical consequences of the heavy reliance on measurements in the absence of conceptual clarity. In particular, I argue that this dynamic has led to a confirmation bias within research and policy writing, where previously held assumptions are fed into model design and the estimates of these models are then inappropriately interpreted causally. This risks contributing to a conflation in common discourse between defining and common features, causes and consequences of informality, that leads to misleading policy discussions.

Both the recent IMF and World Bank reports provide useful illustrations as they effectively echo some of the wider dynamics in recent writing on the informal sector discussed in the section above, specifically the sense of a conceptual consensus amidst diverse but complimentary measurements. Both acknowledge that a multitude of definitions of the informal sector exist, but do not present them as something that is fundamentally relevant to or driving analyses and insights. Notably, they advocate for the usage of multiple measurements.[23] The World Bank report compiles 12 different measurements of informality for its report, noting that '(f)or any economy, the various measures of informality will differ somewhat, both in the level of informality implied and in its variation over time' (Ohnsorge and Yu 2022: 57). While it provides a statistical analysis of how the different measurements employed vary, and at times finds quite substantial discrepancies, the implication here is that these are primarily measurement differences, rather than different things being measured. While both acknowledge consequently that there is disagreement on how informality is being measured, it is not made clear that there is disagreement on what is being measured.

This sense of consensus is further reflected in the fact that while both reports at some point employ MIMIC models (which, in particular, the IMF report relies on heavily), there is almost no discussion on how the specification of these models has been chosen, and the implications that this may have on the results of the report. *De facto*, both models represent a highly voluntarist approach to informality. In the case of the IMF report, this is made quite explicitly through the conception of informality outlined by Schneider, as discussed above.[24] The MIMIC model used in the IMF paper then includes tax burdens and regulatory burdens and the unemployment rate (all assumed to increase informality), an economic freedom and business freedom index and GDP per capita (all assumed to decrease it). The World Bank model is very similar: it includes the size of government, share of direct taxes, a fiscal freedom index and business freedom index (both designed by the Heritage Foundation), the unemployment rate, and an indicator of government effectiveness.

Even without the mention of the Heritage Foundation, it is clear that the list of assumed causes that is employed here to generate a measurement of informality is not uncontroversial and, in contrast to the reports' overall tones, does not resemble a consensus model. Instead, they closely represent the assumptions of a voluntarist approach to informality: almost everything here is geared toward an understanding of informality as caused by excessive regulatory burdens. What these models consequently generate is an index that

[23] Notably, while chapters in both reports are written by different authors, there is not really a discussion of how different conceptions of informality in these chapters or by these authors relate to each other.

[24] 'Hence, shadow economic activities may be defined as those economic activities and income earned that circumvent government regulation, taxation, or observation. More narrowly, the shadow economy includes monetary and nonmonetary transactions of a legal nature, hence, all productive economic activities that would generally be taxable were they reported to the state (tax) authorities. Such activities are deliberately concealed from public authorities to avoid payment of income, value added, or other taxes and social security contributions or to avoid compliance with certain legal labor market standards, such as minimum wages, maximum working hours, or safety standards and administrative procedures' (Medina and Schneider 2021: 14).

relates changes in regulatory burdens to changes in employment and GDP, over time.

This is not in itself inappropriate – the MIMIC method requires strong assumptions – however, as discussed above, it then requires utmost caution in how its data is used and interpreted, especially with respect to causal relationships to issues around regulation and tax. Notably, in their chapter on the modelling of informality in the IMF report, Medina and Schneider very explicitly caution against an over-interpretation of the estimates generated through this model. They note that 'caution is warranted when using shadow economy estimates to test the effect of a tax reduction. This is only possible if the shadow economy series is derived from an approach in which the tax variable has not been used for the construction of the shadow economy' (2021: 27). However, the following chapters in the report (and especially the subsequent chapter) are not at all clear as to how they have arrived at their conclusions regarding the determinants of the informal sector, and how they have engaged with these measurements and their limitations. The main talking points, throughout the report, largely overlap with those already in the MIMIC model: tax, regulation, and administrative barriers.

Notably, this is not unusual, and similar examples can be found throughout the literature on tax and informality. Perhaps most notably, Besley and Persson's 2014 article in the *Journal of Economic Perspectives* titled 'Why Do Developing Countries Tax So Little', to date perhaps the most cited article in the entire literature on tax and development, presents a scatterplot that has the size of the informal economy on one axis and the share of income tax in revenue on the other. The paper discusses their correlation and declares that 'an increase in formality is a key part of the process by which taxation increases with development' (2014: 110). What it does not discuss are the origins of its estimation of informality – it merely cites an unpublished working paper from Friedrich Schneider from 2002. This paper itself does not provide details on the variables in its MIMIC model, but lists among the model inputs, and consequently as a part of how the measurement of informality used in the Besley and Persson article has been constructed, 'the burden of direct and indirect taxation' – because 'a rising burden of taxation provides a strong incentive to work in the informal economy' (Schneider 2002). In the context of a lack of transparency around measurement specifications, pre-conceived assumptions, measurements, and interpretation of resulting correlations come full circle.

There is a similar lack of clarity in the World Bank report, which is exacerbated through the use of multiple different measurements. While the report is careful not to make causal claims, it makes a huge number[25] of associational claims, essentially pointing out correlations (Ohnsorge and Yu 2022). While this, again,

[25] The phrase 'associated with' appears 179 times in the report.

is not in itself inappropriate, it needs to be done with utmost caution in a context where one of the key measurements has been generated by per definition associating informality with a range of variables, the relationship of which to informality is itself a point of policy discussion.

The point here is not to nit-pick writing or claims in these reports but to highlight that, in the absence of more clarity and transparency, what is risked is a feedback loop between assumptions, findings and recommendations, but also between common features and defining features of informal sectors, and a risk toward confirmation bias and the repetition of commonly held and ideologically informed but not empirically verified beliefs about informality.

Taxation provides one particularly notable example of this. Both the World Bank and IMF reports repeat, in their introductions and summaries, two common voluntarist assumptions regarding tax and informality: that informality is associated with lower tax revenues and partially caused by excessive tax burdens. For example, the IMF report explicitly claims in its introduction that 'informal firms do not contribute to the tax base' (Deléchat and Medina 2021: 2). However, this is neither true by definition nor is it true empirically. With regards to defining informality, the ILO definition can easily count firms who are registered for tax purposes as informal if they are not registered with another relevant government agency.[26] Similarly, indirect measurements are too aggregate to provide any assurances that the sector they delineate does not include economic activities that make some tax payments.

Critically, these assumed relationships between tax and informality are also untrue empirically. While there may well be macro-level correlations between some tax measures and informality, these remain correlations and cannot build upon measurements created by MIMIC models that include tax data in their specification.[27] As a substantial literature in recent years has highlighted, many informal enterprises do indeed pay taxes, both to local and national levels of government (Carroll 2011; Anyidoho *et al*., forthcoming). At the same time, there has been a relative lack of evidence for the idea that the costs of registration, and tax levels in particular, are a key factor in keeping firms informal, with research instead pointing toward highly complex, and context- and sector-specific dynamics (Rocha, Ulyssea and Rachter 2018; Williams 2023: 35; Ulyssea 2020).

And yet, the wider association in a policy context of 'informality' with 'low tax revenue' and consequently of formalisation and the 'fight against the informal economy' with increasing tax revenue has remained. In fact, it has actively and

[26] Furthermore, even firms that are not registered for tax may still make regular tax payments through other fiscal mechanisms.

[27] Using a DGE model to examine that relationship, as the World Bank does (Ohnsorge and Yu 2022: 272), is problematic for largely the same reasons discussed above.

directly contributed to a policy enthusiasm around registering informal firms for taxes, and finding new ways to tax the informal sector – both of which have largely been misguided and harmful both from a revenue and equity perspective (Gallien *et al*. 2023; Moore 2021; Gallien and van den Boogaard 2023; Rogan 2019).

This, then, provides an indication of the acute policy consequences of a lack of a clear agreement on how the informal sector is defined and conceptualised. It contributes to a confusion of the object of the discussion and to an increasing reliance on its associations and correlations with wider macroeconomic features based on measurements the details of which are not made transparent and are largely generated from these associations. This risks, both for scholars but in particular for policy practitioners, confusing cause and consequence, common association and defining feature, and creating feedback loops around previously held preconceptions of informality. But given that there are important dynamics within the informal sector that we do not yet understand well enough – tax is one example here, given how much the sector is still changing, and given how much is at stake in the policy implications – substantially more caution is needed. Given the underlying role of a lack of conceptual clarity discussed here, it is worth looking back to the beginning.

4. The informal sector revisited

The previous sections have argued that underneath a seeming consensus on what the informal sector is remains substantial conceptual and definitional ambiguity. While new methodologies and measurements have contributed to a sense of iteratively accumulated knowledge on the informal sector and its causes and consequences, they have not made up for the lack of a clear definition. Instead, they have ‘downstreamed’ definitions – moving open conceptual questions into methodological specifications, increasingly obscuring the actual object of discussion. As this paper has demonstrated, the consequences of these dynamics go beyond the already well-established and natural difficulties and imprecisions of measuring informality. The issue I am raising here is not that they are imprecise, but that they create imprecision about what is being measured and discussed. They add further confusion, particularly around the distinction between defining features and common features of informal enterprises. Consequently, they have a direct bearing on how we characterise the sector, and how we evaluate policy interventions – on whether, for example, the statement that higher informality means lower tax revenues is true by definition, on average, under certain conditions, or not at all. In an area that is so closely connected to a large battery of policy interventions, from registration drives to microfinance to social protection, this is a serious problem.

Illustrating the difficulty in defining the informal sector, Hans Singer is said to have once compared it to a giraffe – it is difficult to define but you recognise it when you see it. Lautier quipped that it rather resembles a unicorn – ‘because the literature abounds with definitions, but you will never have the opportunity to meet one, because it does not exist’ (both cited in Dell’Anno 2021). Based on the discussions presented in this paper, it is tempting to reject both suggestions, and argue that the informal sector actually is a fish – something that we all have a strong sense of being able to recognise, but which has long lost any clear underlying scientific meaning. Contrary to mammals or birds, fish do not represent a single clade but a collection of biologically so vastly different taxa that while we still find them grouped together in restaurant menus the term is no longer recognised in modern systematic biology.

4.1 Ways forward

What ways forward are available? Some of the issues noted in this paper can be addressed by improving the practice with which the current methods and definitions are applied. As noted above, one of the most substantial issues in both direct and indirect measures has been a lack of transparency. In studies relying on direct measures, specifying the precise criteria through which enterprises were defined as formal or informal – and which 'route' of the ILO operational definition was followed, should be standard practice. Similarly, papers utilising MIMIC models, or even just measurements generated by MIMIC models constructed by other authors, should be very specific both about the specifications of these models and the consequences of these specifications for their interpretation. With respect to advising policy, all aggregate and largely correlation-based data should be treated with a high level of caution. Rather than structuring policy discussions around the 'causes and consequences' of informality writ large, some of these confusions could be avoided by grounding analyses more in the particularities of informality within countries, and include context on the respective regulatory mechanisms, tax, and social protection systems.

However, even with improved transparency and reporting, a lack of conceptual clarity about what the sector itself is remains. Looking across recent scholarship on informality and beyond, it seems that here are four potential ways forward.

The first is to discard the term 'informal' altogether. Instead of replacing it with another adjective to describe the bundling of certain features, one option would be to directly categorise firms by these features. To speak of unregistered firms, of firms outside of tax nets, of small firms with less than six employees, of own-account workers, of firms outside of the formal banking system, etc. This provides an effective solution to the conflation and competing conceptualisation in many common discussions around informality. However, there are at least two substantial downsides to this approach. The first is that this entirely removes the connection between features of firms that do still overlap and have a relationship that is worth studying, understanding, and addressing. In particular, it parcels up an issue that has a common conceptual and practical core: namely the relationship between firms and states. The second and rather more practical downside is that it splinters a conversation, alongside a field of scholarship, of activism and of policy practice that has been brought together over the past few decades – as well as a connection with new forms of work in the so-called 'gig economy'. While this spans disciplines and regions, a common terminology has contributed to fostering conversations that would not exist otherwise, and to building policy interest in pressing challenges of informal workers across the globe.

The second approach is to accept that the informal sector has blurred boundaries. This would not in itself be unusual – is not the only concept in the social sciences that does, and perhaps has more of a claim on it than many others. Implicitly or often quite explicitly, this is the dominant approach in much of the writing on the informal sector today, including in some of the flagship policy reports discussed above. The assumption here is that even if we cannot outline it precisely, the accumulation of different perspectives and different measurements – often used alongside each other – can still teach us what we need to understand about informality. Much of the previous section of this paper has attempted to point out exactly why this is a problematic approach when it comes to the informal sector. This is in part because there is such diversity in the features through which the sector has been identified, ranging from enterprise size to unaccounted electricity demand. Perhaps more importantly, it is because this literature is so closely related to ongoing policy discussions and interventions, and because the policy implications of these features are so heterogeneous. What we mean by informality, and how we define it, how exactly we quantify it, sets the standard in discussions on whether there are unwelcome side-effects to expanding social protection, to raising direct taxes, to simplifying registration procedures. For these questions, blurred conceptions of informality can imply that we do not understand the causal links that are being drawn, or that they can be manipulated or presented to generate the results that are ideologically desirable. If we are interested in the informal sector not as an abstract concept but because we are interested in the set of economic actors that operate within the sector, having clarity about who is and is not in the sector is a critical starting point.

The third approach is to conceptualise informality as a spectrum, or a continuum. While measurements of informality are still primarily binary, this perspective has been very common in more general writing on informality in recent years (Guha-Khasnobis *et al*. 2006). This is intuitively attractive – it recognises two of the main difficulties in defining the informal sector throughout the scholarship on the issue: the difficulty to establish clear binaries, and the difficulty to reduce to one separating factor what has often been conceived to be multidimensional. It also closely mirrors an attractive proposition by Holland and Hummel (2022) with regard to the measurement of such a continuum, which they develop with respect to informal labour. They suggest an index approach, built on a checklist of different dimensions of labour informality, and particularly the laws and benefits that an individual worker can have access to. An index approach to the informal sector, similarly, might be an attractive solution to a desire for measurement and a desire to recognise informality as a continuum.

However, the comparison with informal labour also highlights the main problem with both an index and a continuum approach to the informal sector. When considering the conditions of informal workers, different ‘formality markers’ – access to certain labour protections or access to sick leave, for example – may be reasonably seen to be positioned among the same spectrum, to be perhaps not interchangeable but similarly able to move the position of a worker in between two points. However, the same cannot be said for the highly heterogeneous types of factors that are commonly considered in accounts of the informal sector. The number of workers, whether an enterprise is paying taxes, whether it is registered with a social security provider – it is much harder to see these as positioned among the same axes. This implies that the issue with the informal sector is that it may well be multidimensional, but that these different dimensions are highly heterogeneous and far from functional substitutes – they are not really part of a spectrum, at least not of one with only two or three dimensions. What this seems to come up against once more is the fundamental lack of clarity around the very concept of the informal sector – its regulatory dimension and its 'means of production' dimensions. It seems likely that this lack of clarity has itself fuelled the enthusiasm for doing away with the binary altogether, as a recognition not of the fact that the informality of enterprises is actually a spectrum, but that its commonly suggested features do not always overlap.

The fourth approach, then, is to attempt to resolve or at least clarify the conceptual issues that have underpinned the issues discussed in this paper and suggest a revised definition of the informal sector. That is the focus of the following section.

4.2 Re-defining the informal sector: narrow and categorised

Based on the discussions in this paper, there are at least three features that a revised definition of the informal sector should have. First, it should provide a clear and unambiguous set of criteria for the inclusion into the definition. Second, it should recognise the multiple dimensions and aspects of informality that have been highlighted in the literature and in the research field to date but maintain a clear separation between defining and common features. Third, to avoid creating yet another definition without clear or implementable operationalisation, it should bear some relationship to where current writing and measurement methods already are.

What follows is that any revised definition of the informal sector that meets these criteria will be a narrower definition than what is in common use today: distinguishing between common and defining features necessarily implies a focus on one aspect of informality. In order to highlight that different definitions elevate different features of informality, and in order to maximise the transparency of how informality is measured, I suggest the introduction of narrow but clearly categorised definitions that flag the respective definition's defining feature. Table 4.1 presents a suggested taxonomy of some such narrow and categorised definitions – all of them focus on registration, but distinguish between its type and level.

Table 4.1 A categorisation of definitions of the informal sector

Type of registration/ level of registration	Unit registration	Tax	Services
National	National registration informality ('general informality')	National tax informality (registration/payment)	National service informality (registration/receipt)
Subnational	Subnational registration informality	Subnational tax informality (registration/payment)	Subnational service informality (registration/receipt)

Source: Author's own.

4.2.1 National registration informality

To illustrate, the perhaps most obvious 'narrow' definition of the informal sector is via national registration. As discussed above, this is closest to where many current approaches lie, at least those that are reliant on survey data. A registration-focused definition does not imply that all studies on informality should only choose this focus independent of their research focus or context, but that for work that does take this approach, a clarification of this focus may be productive. It also does not dismiss the importance of these other features, such as enterprise size and methods of bookkeeping, for the economic realities of firms captured by this definition, but understands them as common features of informal enterprises, not defining features. Informal enterprises often have limited bookkeeping, but not all enterprises with limited bookkeeping are informal.

A narrow definition of the informal sector in the sense of national registration informality can be achieved by largely retaining the ILO definition and operationalisation, but restricting its focus on registration dimension, excluding firm size.[28] As described above, the ILO definition is ambiguous in terms of the type of registration that is referred to: its operationalisation allows tax registration and service registration as proxies for informality. This would need to be further narrowed to a more limited sense of registration: the national registration of an economic unit – referring to the bureaucratic processes in which businesses provide some information about their existence to a national registry, and in exchange are being provided with some recognition, as legal economic activities.

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[28] Draft resolutions from the most recent ICLS suggest that the ILO may be going in a similar direction.

This refers to Registrar Generals, but also Companies Houses, Companies Commissions, etc. This can differ by enterprise types, for example if simplified registration systems are available for small enterprises – if these provide full legal recognition.[29] This leaves us with the following definition:

> **National registration informality:** the informal sector consists of those unincorporated private economic units engaged in the production of goods or services at least partially for sale or barter that are not fully registered as an economic activity with a national registry in accordance with the legal requirements for this type of activity.

Aside from its increased precision, a distinct advantage of this definition is that its operationalisation only requires two alterations from what is already the common operationalisation by the ILO: narrowing the permissible pathways to registration only, and then within registration to one category of registration. Consequently, a larger comparative sample of measurements based on this definition should be relatively easy to assemble, at least for those countries who have reported registration status to the ILO.

4.2.2 Taxes and services

However, defining the informal sector by national registration status alone may be unattractive for a variety of reasons. Instead of broadening the above definition, a more transparent way forward would be to provide alternative definitions that are clearly labelled with respect to their defining feature. The definitions summarised in Table 4.1 draw on two different distinctions in the relationships between states and informal enterprises: the type of engagement and the level at which this engagement happens. The type of engagement recognises that firm registration is only one of the ways in which enterprises engage with states – it suggests categorisations based on two other common engagements, namely taxation and service provision. The above definition could be simply adjusted by specifying these aspects instead of unit registration. Within both of these categories, definitions should further specify whether they rely on registration alone, or the actual payment of taxes or receipt of services – two dimensions that do not always map on each other. Through the differentiation of levels of engagement, the categorisation in Table 4.1 also recognises that

[29] This can in some contexts require the need for some payments (for the registration of the business, or for a business licence) and it may in some cases bureaucratically require the issuing of a tax registration number, but is not functionally equivalent to tax registration. Aside from some costs or other administrative pre-requirements, the registration may imply some pre-conditions that informal businesses practically cannot meet – they will still be informal if registration is prohibitively expensive, politically selective, or if they are a market vendor requiring a legal plot but selling from a boardwalk. However, they will not be a part of the informal sector if there is no legal status for the activity that they are engaged in – kidnapping for example, or pickpocketing, or the selling of illegal narcotics – this replicates the common separation between an informal and a 'criminal' sector.

registration, taxation and services do not only connect firms to national-level authorities. While scholarship on informality in recent years has highlighted the dense relationships that (nationally) informal firms have in particular with municipalities, this is usually not accounted for in conceptions of the informal sector – the ILO definition, for example, specifically references national registration. It is also worth noting that this framework can be easily extended to include other dimensions of informality – the emphasis here is on their clear and transparent labelling in the definition.

4.2.3 Implications

The definitions suggested above – like all registration-based conceptions that are in current use – make the informal sectors that they delineate not just a feature of these sectors themselves, but also of the states that regulate them. That the size of the informal sector would shrink if states implement mass registration campaigns seems intuitive – that it would also shrink if states merely changed their internal administrative practices, for example by using third-party data or data from other state agencies to automatically register enterprises, may seem a bit more surprising. However, to a degree this is already an inherent challenge in definitions and measurements of the informal sector. In recent years, various states have embarked on online registration programs for informal workers – some (Egypt, for example) have done this during the pandemic, while others (India, for example) have introduced such systems immediately after the pandemic. Consequently, they have grounds to argue (and in the case of India, have done so), that the sizes of their informal sectors have decreased, while the material conditions of the workers in these sectors have stayed the same. This essentially serves as a reminder that registration-based conceptions remain focused on their relationship with states, and that benefits or other material changes for informal firms may not follow automatically.[30] Using definitions that foreground specific aspects of informality makes this more explicit – while India's E-Shraam program has decreased national registration informality in India substantially, narrowing this observation to registration highlights that the impacts on service and tax informality remain an empirical question that requires data beyond that which is provided by E-Shraam itself. This can be applied more widely – the main implications of these definitions for the measurement of informality and the academic and policy discussions around it are a more transparent discussion of the different aspects of informality, both in describing a current situation and in evaluating changes over time and their relationship with policy interventions. The different dimensions of informality clearly correlate, but do not strictly map upon each other.

[30] This represents essentially what Gallien and van den Boogaard (2023) have described as 'evolutionary fallacy'.

Again, Accra provides a useful illustration. As noted in section 3.2, the ILO reports that 84.8 per cent of employment in Ghana is in the informal sector (ILO 2018b).[31] Based on the reporting standard for Ghana, this maps precisely upon the above definition of the informal sector – or what I have here called national registration informality. Based on our survey of informal enterprises in Accra conducted in 2022, it is possible to estimate that only just under 60 per cent of the enterprises that are considered informal in its national registration dimension are also considered informal if a subnational angle at that dimension is taken. Only about 77 per cent of them are considered informal if a national tax angle at the informal sector is taken – dropping to about one third if a local tax angle is considered, as many informal firms in Accra make payments to the AMA. Even just when considering different aspects of the aspect of informality that relates to its relationship with the state, a more complicated – and interesting – picture emerges than just the observation that Accra's informal sector is quite large.

This has further implications if considering the effect of policy interventions. Ghana's 'E-Levy', a tax on mobile money transactions, was partially introduced with reference to the fact that it was necessary to come up with new tools to tax the country's large informal sector (Anyidoho *et al*. 2022). If the distinction between registration informality and tax informality had been more widespread, the fact that a substantial portion of informal firms in Ghana do already pay taxes might have been better known. But this also provides a better language to interrogate the effects of the E-Levy on informality in Accra. For example, while the E-Levy included measures that were designed to motivate informal enterprises to register, and consequently to lower national registration informality, there are limited indications that this has been successful (Scarpini *et al*., forthcoming). At the same time, the effect on tax informality depends on whether the E-Levy is categorised among direct or indirect taxes. If, for the sake of argument, it was considered among direct taxes, the reform would have had an effect on national tax informality – lowering it by an estimated 26 per cent in Accra, but also imposing additional payments on those informal firms who had already been making payments.[32]

31 The ILO here is drawing on data from the 2013 Ghana Living Standards Survey (GLSS).

32 This has been calculated by considering the number of informal workers in our survey who were not making payments to the Ghana Revenue Authority but reported making transactions over the 100 cedi threshold for E-Levy eligibility. If the threshold was dropped, as has been discussed recently, this would increase to 47 per cent.

5. Conclusion

This paper has examined contemporary definitions and measurements of the informal sector to excavate some of the confusions in its conceptions. It sought to highlight that while the common availability of a range of different measurements of the size and output of informal sectors across the globe have created the impression of a broadly agreed object of study and an iterative increase of knowledge of its causes and effects, this is fundamentally spurious. In the absence of a universally agreed conception of the informal sector, they have moved key conceptual questions downstream, out of the definitions and into the specifications of measurements and models. This has resulted in a lack of transparency and clarity that has created substantial scope for misunderstandings in academic analysis and policy discourse, with direct impacts on evaluations of tax changes or new social protection mechanisms.

The paper has reviewed potential ways forward, highlighting in particular the need for more transparency and clarity – to move conceptual decisions back upstream into definitions and conceptualisations. In line with this, it has suggested some revisions to the most commonly used definition of the informal sector in order to clarify some of these issues and recognise its wider dimensions: to create narrower but categorised definitions. It is important to highlight that in doing so, I am not seeking to make a normative case for which aspect of informality we should focus on or study, or what is most in need of intervention. The definitions suggested here delineate the scope of measurement, not the scope of what we should care about. It has nothing to say about the scope of informal work beyond the informal sector, or about informal economic activities by formal firms. Notably, there may be plenty to care about in enterprises that may fall outside of the definition of the informal sector. Many of the issues of most interest – from economic precarity to productivity – straddle the formal–informal boundary. However, addressing them is aided both by more clarity and transparency of where that boundary is, and a more explicit discussion of which boundary is relevant, and why. That is the contribution that this paper has sought to make.

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